Gavilan WCD
Perc. Pond Exploration
Uvas Creek

Terratech, Inc., 1983, Ground Water Recharge Evaluation, Uvas Creek Park Area, Gilroy, California: for Gavilan Water Conservation District, 6 p., 12 drilling logs, 1 map, 1 profile of drill holes.

Contains drilling logs for recharge evaluation.

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GROUND WATER RECHARGE EVALUATION
UVAS CREEK PARK AREA
GILROY, CALIFORNIA

PROJECT 7607

For

Gavilan Water Conservation District
Chestnut Square
401 E. Tenth Street
Gilroy, California

By

TERRATECH, INC.
8505 Church Street
Gilroy, California

August, 1983

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GROUND WATER RECHARGE EVALUATION
UVAS CREEK PARK AREA
GILROY, CALIFORNIA

INTRODUCTION

This report presents the results of our ground water recharge evaluation of the proposed Uvas Creek Park area in Gilroy, California. An area along Uvas Creek between Miller Avenue and Santa Teresa Boulevard is jointly being considered for development by the Gavilan Water Conservation District and the City of Gilroy. The Gavilan Water Conservation District is proposing to construct a percolation pond for the recharge of ground water, and the City of Gilroy is planning to incorporate the pond into a design for a municipal park. The proposed Uvas Creek Park site occupies a total of approximately 75 acres on both the northeastern and southwestern sides of the Uvas creek.

PURPOSE AND SCOPE

The purpose of this investigation was to evaluate the subsurface materials and conditions in the overall study area and provide estimates of relative percolation capacities of the area.

The scope of this study was developed through discussions with Mr. Jack Sturla of the Gavilan Water Conservation District and was originally detailed in our letter of proposal dated June 9, 1983. As established, our scope of services for this study was limited to the following:

1. Research the earlier land use of the study area by study of available geologic literature and aerial photographs.

2. Perform geologic reconniassance and subsurface exploration of the site. This involved drilling of twelve (12) drill holes to a minimum depth of 15 feet below ground water. Maximum depth of the holes was between 20 and 50 feet.

3. Evaluate the field and research data generated by this investigation and make appropriate geological interpretations regarding subsurface conditions.

4. Prepare a written report presenting all findings, conclusions, and recommendations necessary for evaluating the relative percolation capacities of the soils within the study area.

Our field exploration was accomplished on June 21, 1983 with a Mobil B-53 drill rig using continuous flight augers. Locations of the drill holes are presented on Figure 1 - Site Plan. Elevations above existing creek level were measured for five (5) of the drill holes. Logs of all of the drill holes are presented in the Appendix to this report. Material types were logged according to the Unified Soil Classification system, a copy of which is included in the Appendix.

FINDINGS

Study of aerial photographs and the results of our site reconnaissance indicate that the surface of most of the study area has been previously worked as a gravel quarry. The depth of the disturbed zones is not known. A well developed soil cover is present in only a small portion of the site.

Literature Review

Regional geologic maps of the area (Williams, et al., 1973; Dibblee, 1973; Dibblee and Brabb, 1978) show the site to be underlain by stream gravels and young alluvial plain deposits. Soils on the site are classified as River gravels, gravelly loam of the Cortina series, and loam over gravel of the Garretson series (Lindsey, 1974). Among the various properties attributed to these soils are rapid permeability (Cortina) and very rapid permeability (Garretson) (Lindsey, 1974). Bedrock beneath the site is probably composed of Miocene-aged Temblor sandstone and Monterey shale. The depth to bedrock is probably less than 100 feet (Williams and Bishop, 1974; California Department of Water Resources, 1981; and water well data supplied by Gavilan Water Conservation District).

Field Exploration

Surface exposures of natural stream deposits and of worked, backfill materials were observed in fifteen (15) to twenty (20) locations on the site. In all instances, the exposures were composed of sandy gravel or clayey gravel (GP or GC). The possible presence of fine grained material on the surface, however, can not be discounted altogether, because such materials generally do not outcrop very well and, hence, would not be as readily observed.

The majority of the sediments observed in the twelve (12) drill holes completed on the site are sandy gravel or clayey gravel and can be considered stream channel deposits. A geologic profile of the site with drill hole data projected onto it is shown in Figure 2 - Profile of Drill Holes. There appears to be no particular concentration of channels at any specific depth below ground surface; there is no apparent pattern to the areal distribution of the gravels; and there is no apparent pattern to the presence of clayey gravels versus the presence of sandy gravels. It is probable that a myriad of discrete channel deposits of sandy gravel and clayey gravel inter-twine at all of the explored depths beneath the site. No thick, laterally continuous, predominantly clayey deposits were encountered in our exploration.

The elevation above existing creek water level was measured for five (5) of the twelve (12) drill holes. In every instance, the difference between the elevation of the water in the creek and the measured depth to water within the drill hole was one foot or less. Because drilling operations affect the permeability of the sidewalls, water level mesurements within the drill hole can often be in error by as much as one foot or more. It is probable that ground water in the study area actually stands at or very near the elevation of the creek water. This would indicate that water can move relatively easily through the soils, and that the soils near the ground water table are probably very permeable.

CONCLUSIONS AND RECOMMENDATIONS

Gravel channel deposits predominate to depths of at least 15 feet below existing ground water levels across the entire site. These gravels contain variable amounts of clay, but there is no particular areal or depth pattern to the occurrence of the clays. It is unlikely that there are any pervasive clay bodies which could significantly retard the movement of ground water across large areas of the site. It is our opinion that the percolation capacity of any selected area of 5 or more acres within the site would not vary significantly from that of any other similarly sized area.

Our original objective for this study was to subdivide the site into areas characterized by soils possessing:

1) better percolation characteristics.

2) intermediate percolation characteristics.

3) poor percolation characteristics.

It is our opinion that the majority of the site possesses either "better" or "intermediate" percolation characteristics, but with the data we have generated, it is not feasible to subdivide the site into separate, discrete areas. Whereas one drill hole may have revealed soils of higher permeability in the upper half than in the lower half, a nearby hole may have revealed the opposite profile. Without additional, more closely spaced drill hole data, it would be inappropriate to extrapolate our interpretations any significant distance beyond our present drill holes. However, it is unlikely that any significant areas of the site possess soils with "poor" percolation characteristics. In our opinion, a pond designed for the infiltration of ground water could suitably be sited anywhere within the area investigated for this study.

LIMITATIONS

This report has been prepared with the use of published regional data and site-specific data generated from field reconnaissance and limited subsurface exploration. It must be noted that drill hole data is restrictive in area, and conditions may vary within short distances from the points of exploration. Data has been interpreted using standard principles of the geologic profession.

Report prepared by

TERRATECH, INC.

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Reviewed by

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CE 26239

PCA:lls

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California Department of Water Resources, 1981, Evaluation of Ground Water Resources South San Francisco Bay, Volume IV: South Santa Clara County Area, Bulletin 118-1, 143 pages.

Dibblee, T.W., Jr., and Brabb, E.E., 1973, Preliminary Geologic Map of the Gilroy Quadrangle, California: U.S. Geological Survey Open File Map 73-59, 1:24,000.

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Lindsey, W.C., 1974, Soil Survey of Eastern Santa Clara Area, California: U.S. Department of Agriculture, Soil Conservation Service, 90 pages, maps 1:24,000.

Williams, J.W., Armstrong, C.F., Hart, E.W., and Rogers, T.H., 1973, Environmental Geologic Analysis of the South County Study Area, Santa Clara County, California: California Division of Mines and Geology Preliminary Report 18, 41 pages, maps 1:24,000.

Williams, J.W., and Bishop, C.E., 1974, Engineering Boring Data Map, in Potential Seismic Hazards in Santa Clara County, California: California Division of Mines and Geology Special Report 107, 1:62,500.

APPENDIX

SOIL CLASSIFICATION

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN No. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	Clean Gravels (less than 5% fines*)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines.
		Gravel with fines*	GM	Silty gravels, gravel-sand-silt mixture, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixture, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	Clean Sands (less than 5% fines*)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		Sands with fines*	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sand, sand clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN No. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 35		ML	Inorganic silts, clayey silts, rock flour silty very fine sands.
			CL	Inorganic clays of low plasticity, gravelly clays of low plasticity
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS LIQUID LIMIT IS BETWEEN 35 AND 50		MI	Inorganic silts, clayey silts and silty fine sand with intermediate plasticity
			CI	Inorganic clays, gravelly clays, sandy clays and silty clays of intermediate plasticity
			OI	Organic clays and silty clays of intermediate plasticity.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50		MH	Inorganic silts, clayey silts, elastic silts, micaceous or diatomaceous silty or fine sandy soil.
			CH	Inorganic clays of high plasticity
			OH	Organic clays and silts of high plasticity
HIGHLY ORGANIC SOILS			Pt	Peat, meadow mat, highly organic soils.

SOIL CONSISTENCY

SAND and GRAVELS (non cohesive)	BLOWS per FOOT**
Very loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	over 50

SILTS and CLAYS	UNCONFINED SHEAR STRENGTH (PSF)
Very soft	0 - 375
Soft	375 - 750
Firm	750 - 1500
Stiff	1500 - 3000
Very Stiff	3000 - 6000
Hard	over 6000

*FINES - Material smaller than No. 200 sieve size

**BLOWS per FOOT - Resistance to the advancement of the soil sampler - Number of blows of 140 pound hammer falling 30 inches required to drive sampler and drill rod

KEY TO EXPLORATORY LOGS
TERRATECH INC.

EXPLORATION DRILL HOLE LOG

HOLE No. 1

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 6-1/2' **FINAL** 6' after 10 minutes **HOLE ELEV.** 7' above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, dry, loose, slightly sandy GRAVEL; well graded with clasts ranging in size up to 2"	GW												
		1											
		2											
		3											
		4											
		5											
wet		6											
		7											
medium dense		8											
		9											
		10											
clayey, clasts generally smaller (≤ 1")	GC	11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

BOTTOM OF DRILL HOLE @ 20'

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EXPLORATION DRILL HOLE LOG

HOLE No. 2

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 2-1/2' **FINAL** 2-1/2' **HOLE ELEV.** 3' above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, damp, firm, slightly gravelly, clayey, very silty, fine-grained SAND	SC/SM												
		1											
		2											
		3											
		4											
Light brown, wet, medium dense, sandy, clayey GRAVEL	GC	5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
generally free of fines	GP	15											
		16											
		17											
		18											
		19											
		20											

BOTTOM OF DRILL HOLE @ 20'

PROJECT 7607 **TERRATECH** Page 1 of 1

EXPLORATION DRILL HOLE LOG

HOLE No. 3

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 2-1/2' **FINAL** 2-1/2' after 1 hour **HOLE ELEV.** 2-1/2' above creek water

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, damp, loose, clayey, sandy GRAVEL; gravels coarse (≤ 2-1/2")	GC												
		1											
wet		2											
		3											
		4											
		5											
medium dense, less clayey clasts ~ 1"	GP	6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
continues unvarying		14											
		15											
		16											
		17											
		18											
		19											
		20											

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EXPLORATION DRILL HOLE LOG

HOLE No. 3

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 2-1/2' **FINAL** 2-1/2' after 1 hour **HOLE ELEV.** 2-1/2' above creek water

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
medium dense, less clayey; clasts ~ 1"	GP												
		21											
		22											
Brown, wet, dense, sandy, clayey GRAVEL; gravels ≤ 1"	GC	23											
		24											
		25											
		26											
		27											
		28											
		29											
		30											
medium dense; gravels continue to be small		31											
		32											
		33											
		34											
hole caves only a few inches when augers are raised 5 feet		35											
		36											
		37											
		38											
		39											
		40											

PROJECT 7607 **TERRATECH**

EXPLORATION DRILL HOLE LOG

HOLE No. 3

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 2-1/2' **FINAL** 2-1/2' after 1 hour **HOLE ELEV.** 2-1/2' above creek water

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, wet, dense, sandy, clayey GRAVEL; gravels ≤ 1" occasionally less clayey and very silty (GM) for a few feet at a time	GC	41											
		42											
		43											
		44											
Reddish-brown, damp, stiff, very sandy, very clayey GRAVEL to gravelly CLAY	GC/CL	45											
		46											
		47											
		48											
		49											
BOTTOM OF DRILL HOLE @ 50'		50											
		51											
		52											
		53											
		54											
		55											
		56											
		57											
		58											
		59											
		60											

PROJECT 7607 **TERRATECH** Page 3 of 3

EXPLORATION DRILL HOLE LOG

HOLE No. 4

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 4'(±) **FINAL** hole caved immediately to 3' **HOLE ELEV.** 5' above creek level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, dry, loose, slightly sandy GRAVEL; well graded with clasts ranging in size up to 1-1/2"	GW	1											
		2											
		3											
wet		4											
		5											
medium dense		6											
		7											
		8											
clasts coarse (≤ 2-1/2") hole caves immediately when augers are lifted		9											
		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
gravels very coarse (≤ 4")		18											
		19											
		20											

BOTTOM OF DRILL HOLE @ 20'

PROJECT 7607 **TERRATECH** Page 1 of 1

EXPLORATION DRILL HOLE LOG

HOLE No. 5

PROJECT Uvas CreekTownhomes **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 6' **FINAL** not recorded **HOLE ELEV.** 5-1/2' above water

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Tan, dry, medium dense, slightly gravelly SAND	SP												
		1											
		2											
		3											
Brown and gray, damp, dense, very sandy GRAVEL; gravels ≤ 1/2"	GP	4											
		5											
wet; gravels coarse (≤ 2"); slightly clayey		6											
		7											
		8											
gravels fine (≤ 1") quite clayey	GC	9											
		10											
		11											
		12											
		13											
thin (≤ 1') beds of sandy CLAY (CL) within the clayey GRAVEL		14											
		15											
		16											
		17											
		18											
		19											
		20											

BOTTOM OF DRILL HOLE @ 20'

PROJECT 7607 **TERRATECH** Page 1 of 1

EXPLORATION DRILL HOLE LOG	**HOLE No.** 6

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 17' ± **FINAL** 10' after 5 minutes, 11' after 3 hours **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, damp, medium dense, slightly clayey, very sandy GRAVEL	GP	1											
		2											
clasts ≤ 1"		3											
		4											
		5											
		6											
		7											
		8											
		9											
slightly more clayey (GC) over narrow zones (probably less than 1-foot thick)		10											
		11											
		12											
		13											
		14											
		15											
		16											
wet		17											
clast size remains ≤ 1"		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG | **HOLE No.** 6

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 17'± **FINAL** 10' after 5 minutes
11' after 3 hours **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, damp, medium dense, slightly clayey, very sandy GRAVEL hole caves immediately as augers are raised; takes considerable reaming to keep hole open	GP	21											
		22											
		23											
		24											
		25											
		26											
becoming more clayey	GC/GP	27											
		28											
less clayey again	GP	29											
		30											
		31											
		32											
		33											
gravel clasts still ≤ 1"		34											
		35											
BOTTOM OF DRILL HOLE @ 35'		36											
		37											
		38											
		39											
		40											

EXPLORATION DRILL HOLE LOG

HOLE No. 7

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 7' **FINAL** 5-1/2' after 20 minutes **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Dark brown, damp, firm gravelly, sandy, silty CLAY	CL	1											
		2											
		3											
		4											
		5											
Brown, damp, medium dense, sandy, very clayey GRAVEL	GC	6											
wet		7											
		8											
		9											
		10											
Brown, wet, firm, sandy, gravelly CLAY	CL	11											
		12											
		13											
Brown and gray, medium dense, sandy, clayey GRAVEL; clasts ≤ 1"	GC	14											
		15											
		16											
Brown, damp, firm, sandy CLAY	CL	17											
		18											
		19											
Brown and gray, wet, medium dense, clayey, sandy GRAVEL	GP	20											

EXPLORATION DRILL HOLE LOG

HOLE No. 7

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 7' **FINAL** 5-1/2' after 20 minutes **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, wet, medium dense, clayey, sandy GRAVEL	GP												
		21											
		22											
		23											
		24											
		25											
Light yellow-brown, stiff, sandy, very gravely CLAY to clayey GRAVEL; gravels to 1/2"	GC/CL	26											
		27											
		28											
		29											
BOTTOM OF DRILL HOLE @ 30'		30											
		31											
		32											
		33											
		34											
		35											
		36											
		37											
		38											
		39											
		40											

EXPLORATION DRILL HOLE LOG

HOLE No. 8

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 4' **FINAL** 2-1/2' after 1 hour **HOLE ELEV.** 22" above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Medium brown, damp, medium dense, gravelly, very clayey SAND	SC												
		1											
		2											
		3											
wet		4											
		5											
		6											
Brown, wet, medium dense, very slightly clayey, sandy GRAVEL	GP												
		7											
very coarse clasts (≤ 3")		8											
		9											
		10											
		11											
		12											
		13											
continues very coarse and quite free of fines (hole caves immediately when augers lifted even just a few feet)		14											
		15											
		16											
drills very slowly; hard drilling through and around coarse gravel clasts		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. 8

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 4' **FINAL** 2-1/2' after 1 hour **HOLE ELEV.** 22" above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, wet, medium dense, very slightly clayey, sandy GRAVEL	GP												
		1											
		2											
		3											
		4											
		5											
continues very coarse gravels		6											
		7											
		8											
		9											
		10											
		11											
		12											
		13											
		14											
		15											
gravels less coarse, but dense													
		16											
		17											
very sandy	GP/SP												
		18											
gravelly again	GP	19											
		20											

PROJECT 7607 **TERRATECH**

EXPLORATION DRILL HOLE LOG

HOLE No. 8

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 4' **FINAL** 2-1/2' after 1 hour **HOLE ELEV.** 22" above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, wet, medium dense, very slightly clayey, sandy GRAVEL	GP	1											
Brown, damp, stiff, sandy CLAY	CL	2											
		3											
		4											
		5											
gravelly		6											
Yellow-brown and red-brown, damp, dense, sandy, very gravelly CLAY to clayey GRAVEL; clasts small (≤ ~1/2")	GC/CL	7											
		8											
		9											
		10											
BOTTOM OF HOLE @ 50'		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

PROJECT 7607 **TERRATECH** Page 3 of 3

EXPLORATION DRILL HOLE LOG	**HOLE No.** 9

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 17' **FINAL** 15-1/2' after 1 hr. **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, slightly damp, loose, slightly clayey SAND	SP/SC	1											
		2											
		3											
		4											
Brown and gray, damp, medium dense, clayey, very sandy GRAVEL to gravelly SAND	GP/SP	5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
Dark brown, damp to moist, firm, sandy CLAY	CL	13											
		14											
		15											
		16											
		17											
Brown, wet, medium dense, slightly clayey, sandy GRAVEL	GP/GC	18											
		19											
more clayey	GC	20											

PROJECT 7607 **TERRATECH** Page 1 of 2

EXPLORATION DRILL HOLE LOG

HOLE No. 9

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 17' **FINAL** 5-1/2' after 1 hour **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown, wet, medium dense, slightly clayey, sandy GRAVEL	GC	1											
pulled augers at 25' and hole caved to 22'		2											
		3											
gravels not very coarse (≤ 1"); very sandy, very clayey		4											
		5											
		6											
		7											
		8											
		9											
		10											
Dark reddish-brown, damp, stiff, slightly gravelly, very sandy CLAY	CL	11											
		12											
		13											
		14											
BOTTOM OF DRILL HOLE @ 35'		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. 10

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 21' **FINAL** hole caved immediately to 12' (dry) **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Gray and tan, dry, dense, very sandy GRAVEL	GP												
		1											
		2											
		3											
		4											
		5											
		6											
		7											
		8											
		9											
		10											
		11											
		12											
Tan, dry, medium dense, gravelly SAND	SP	13											
		14											
Gray and tan, slightly damp, sandy GRAVEL	GP	15											
		16											
		17											
		18											
slightly clayey, damp													
		19											
		20											

PROJECT 7607 **TERRATECH** Page 1 of 2

EXPLORATION DRILL HOLE LOG

HOLE No. 10

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 21' **FINAL** hole caved immediately to 12' (dry) **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Gray and tan, slightly damp, sandy GRAVEL	GP												
wet		21											
pulled augers at 25' to inspect; hole caved immediately to 16'		22											
		23											
		24											
		25											
		26											
		27											
		28											
		29											
		30											
		31											
		32											
Light brown, wet, medium dense, slightly gravelly, clayey SAND	SC												
		33											
		34											
		35											
BOTTOM OF DRILL HOLE @ 35'													
		36											
		37											
		38											
		39											
		40											

EXPLORATION DRILL HOLE LOG

HOLE No. 11

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 17' **FINAL** **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Tan, dry, hard, sandy, very gravelly CLAY to clayey GRAVEL	CL/GC	1											
		2											
		3											
Brown and gray, dry, medium dense, sandy GRAVEL	GP	4											
		5											
		6											
		7											
		8											
damp		9											
		10											
		11											
		12											
gravels not very coarse, very sandy		13											
		14											
		15											
		16											
wet		17											
		18											
pulled augers to inspect at 20'; hole caved immediately to 17'		19											
		20											

EXPLORATION DRILL HOLE LOG

HOLE No. 11

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 17' **FINAL** **HOLE ELEV.**

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, dry, medium dense, sandy GRAVEL	GP	21											
		22											
		23											
		24											
		25											
		26											
		27											
		28											
		29											
		30											
Brown, moist, medium dense, clayey SAND	SC	31											
		32											
		33											
Brown and gray, wet, dense, sandy GRAVEL	GP	34											
		35											
BOTTOM OF DRILL HOLE @ 35'		36											
Hole caved immediately to 12' when augers pulled		37											
		38											
		39											
		40											

PROJECT 7607 **TERRATECH** Page 2 of 2

EXPLORATION DRILL HOLE LOG	**HOLE No.** 12

PROJECT Uvas Creek **DATE** 6/21/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 8' **FINAL** hole caved to 6' (dry) after 8 hours **HOLE ELEV** 8' above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, dry, medium dense, very slightly clayey, sandy GRAVEL	GP												
		1											
		2											
		3											
damp, very sandy		4											
		5											
		6											
		7											
wet		8											
		9											
very sandy, dense		10											
		11											
		12											
		13											
		14											
		15											
		16											
		17											
		18											
		19											
		20											

EXPLORATION DRILL HOLE LOG

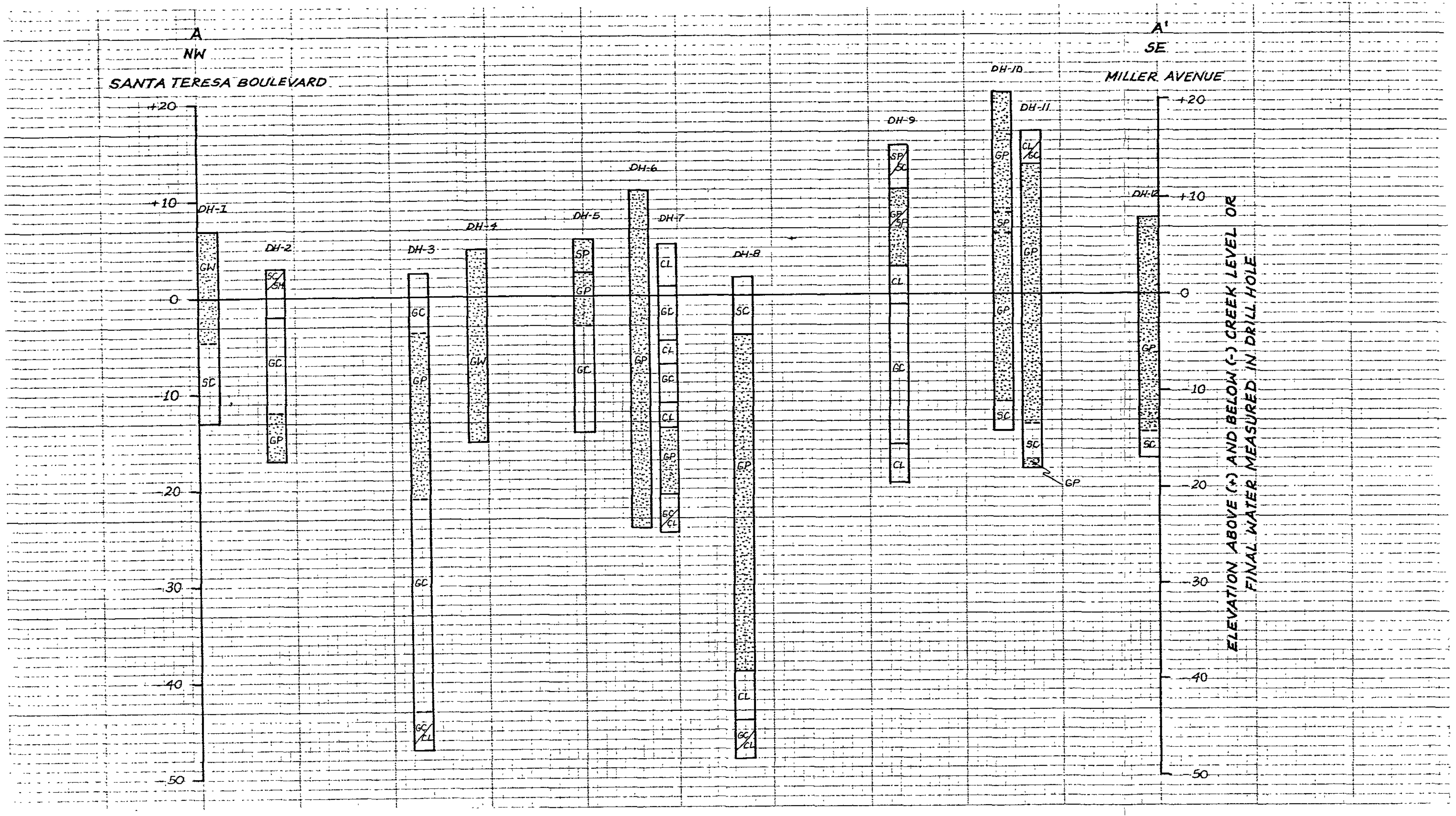
HOLE No. 12

PROJECT Uvas Creek **DATE** 6/218/83 **LOGGED BY** PCA

DRILL RIG Cont. Flight **HOLE DIA.** 5-1/2" **SAMPLER**

GROUNDWATER DEPTH INITIAL 8' **FINAL** hole caved to 6' (dry) after 8 hours **HOLE ELEV.** 8' above creek water level

DESCRIPTION	SOIL TYPE	DEPTH	SAMPLE	BLOWS PER FOOT	POCKET PEN.(tsf)	TORVANE(tsf)		LIQUID LIMIT	WATER CONTENT	PLASTIC LIMIT	DRY DENSITY (pcf)	FAILURE STRAIN(%)	UNCONFINED SHEAR STRENGTH(psf)
Brown and gray, dry, medium dense, very slightly clayey, sandy GRAVEL	GP	21											
		22											
		23											
Dark brown, moist, very clayey SAND	SC	24											
		25											
BOTTOM OF DRILL HOLE @ 25'		26											
		27											
		28											
		29											
		30											
		31											
		32											
		33											
		34											
		35											
		36											
		37											
		38											
		39											
		40											



SCALE: Horizontal - 1" = 500'
Vertical - 1" = 10' } vertical exaggeration 50x

TERRATECH

NOTE:
- Soil types are from the Unified Soil Classification
- Relatively clay-free zones (SP, GP, GW) are shown in stipple
- Drill holes have been projected onto this profile line from between 0 and 440 feet away

PROFILE OF DRILL HOLES

UVAS CREEK
GILROY, CALIFORNIA

FIGURE
2

PROJECT
7607